

ALBERTA WATER COUNCIL



OCTOBER 2012

Review of Implementation Progress of *Water for Life*, 2009 – 2011



About the Alberta Water Council

The Alberta Water Council is a multi-stakeholder partnership with members from governments, industry and non-government organizations. All members have a stake in water. The Alberta Water Council is one of three types of partnerships established under the *Water for Life* strategy; the others are Watershed Planning and Advisory Councils and Watershed Stewardship Groups.

The Alberta Water Council regularly reviews implementation progress of the *Water for Life* strategy and champions the achievement of the strategy's goals. The Council also advises the Government of Alberta, stakeholders and the public on effective water management practices, solutions to water issues and priorities for water research. The Council may advise on government policy and legislation. However, the Government of Alberta remains accountable for the implementation of the *Water for Life* strategy and continues to administer water and watershed management activities throughout the province.

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Acronyms

AI-EES	Alberta Innovates-Energy and Environment Solutions ¹
AWC	Alberta Water Council
CEMS	Cumulative Effects Management System
CEP	Conservation, Efficiency and Productivity
GOA	Government of Alberta
HAE	Healthy Aquatic Ecosystems
IFN	Instream Flow Needs
LUF	Land Use Framework
WCO	Water Conservation Objective
WPAC	Watershed Planning and Advisory Council
WSG	Watershed Stewardship Group
WFL	<i>Water for Life</i> strategy

¹ The Alberta Water Research Institute (AWRI) was established by the Government of Alberta to coordinate world class and leading edge research in support of the *Water for Life* strategy. The AWRI's roles and responsibilities were later absorbed by AI-EES under their Water Resources strategic area.

Executive Summary and Recommendations

One of the Alberta Water Council's (AWC) most important tasks is to regularly review implementation progress of the *Water for Life (WFL)* strategy including the achievement of its three goals: 1) Safe, secure drinking water, 2) Healthy aquatic ecosystems, and 3) Reliable, quality water supplies for a sustainable economy. The strategy also identifies knowledge and research, partnerships, and water conservation as means to achieve these goals.

Since the *WFL* strategy was released in 2003, the AWC has completed three implementation reviews, the last one for 2006 – 2008. The recommendations from the last review were incorporated into the Government of Alberta's (GOA) *Water for Life Action Plan*, released in 2009. This report describes the AWC's fourth review, which provides a snapshot of progress towards the goals of *WFL* as of December 31, 2011, including actions that were implemented between 2009 and 2011. This review will inform the GOA on the next renewal of the strategy, as well as the *WFL* partnerships as they continue their work.

This review followed the AWC's approved "How-To" Guide. The process included interviewing GOA staff to determine the current status of each *WFL* goal or key direction and the implementation status of each of their associated actions. As well, a survey was circulated to AWC sector stakeholders and Alberta watershed stewardship groups via the Land Stewardship Centre of Canada. The results were then compiled and analyzed, leading to several recommendations.

For the most part, the first nine recommendations listed below are at a high, strategic level, offering new emphasis on various aspects of the goal or key direction addressed by each one. In general, the recommendations indicate that the GOA, in implementing *WFL*, should "stay the course;" that is, its actions for each *WFL* goal and key direction as stated in the 2009 Action Plan are still appropriate and still believed to be needed to achieve *WFL* outcomes. If anything, recognizing capacity and other constraints, stakeholders are anxious to see these actions and their associated outputs completed. Thus, these recommendations provide good advice and will blend seamlessly with the next *WFL* renewal.

Recommendation ten addresses an area that has not been identified in previous reviews or strategy renewals and is more specific than the first nine recommendations. This recommendation to develop metrics to better measure if we are achieving *WFL* outcomes will require some innovative thinking and some new resourcing. Additionally, work should start soon if metrics are to be in place before the next *WFL* Implementation Review is conducted.

Alberta has made significant progress in implementing *Water for Life* over the past decade, but work remains to be done and momentum needs to be maintained. The upcoming 10-year anniversary provides an opportunity for not just the GOA but for all sectors to re-confirm their commitment to the enduring direction that *Water for Life* has laid out so well. It also provides an opportunity to reflect on how we can continue to work together to move water management in Alberta forward.

The Alberta Water Council recommends that:

Recommendation #1: The Government of Alberta continue to develop, adopt and promote a watershed, risk-based, source-to-tap drinking water management approach that includes source protection planning, effective monitoring and compliance of point and non-point source pollution, and efficient and effective water distribution systems.

Recommendation #2: The Government of Alberta and stakeholders complete outstanding Healthy Aquatic Ecosystem actions including: finalize and implement a wetland policy (Action 2.1), protect critical aquatic ecosystems (Action 2.2) and set water conservation objectives for each basin (Action 2.5).

Recommendation #3: The Government of Alberta continue to work with its partners to: develop the best available science-based methods and tools to better define requirements for healthy aquatic ecosystems and performance measures; incorporate healthy aquatic ecosystem assessment and management into the province's new integrated cumulative effects monitoring and management systems; and publicly report on progress towards the achievement of healthy aquatic ecosystem outcomes.

Recommendation #4: The Government of Alberta complete the water allocation review via transparent, broad-based public consultation based on socio-economic and environmental objectives; ensure current and future water demand and supply are understood in each basin; and make this information and other water use data publicly available to inform regional, municipal and other land-use planning initiatives.

Recommendation #5: The Government of Alberta and its *Water for Life* partners, working closely with research and academic institutions and other education and outreach providers, revisit the knowledge and research key direction and develop a plan to improve public and sector understanding of the value of water to better inform public policy and decision making.

Recommendation #6: *Water for Life* partnerships clearly identify their capacity needs in relation to provincial and basin *Water for Life* priorities and seek collaborative approaches to long-term sustainable resourcing of these needs.

Recommendation #7: Water-using sectors with water conservation, efficiency and productivity (CEP) plans raise awareness of their plans by promoting them to their members, thus encouraging all members to develop individual CEP plans or strategies to contribute to CEP gains.

Recommendation #8: The Government of Alberta investigate the use of additional economic instruments, applied in an equitable manner, to encourage water conservation, efficiency and productivity and determine how this approach will contribute to the achievement of all three *Water for Life* goals.

Recommendation #9: *Water for Life* partnerships, in undertaking iterative and adaptive watershed assessment and planning, continue to work with the Government of Alberta and other sectors to integrate this work into the provincial cumulative effects management system and regional, municipal, resource and other land-use planning initiatives.

Recommendation #10: The Government of Alberta develop quantitative performance criteria and clear metrics that assess the progress towards *Water for Life* goals and key directions before the next Alberta Water Council strategy review in 2015.

1.0 Introduction

After extensive consultation, the Government of Alberta (GOA) released *Water for Life: Alberta's Strategy for Sustainability* in 2003. The strategy's foundation is its three goals, which are:

- Safe, secure drinking water;
- Healthy aquatic ecosystems; and
- Reliable, quality water supplies for a sustainable economy.

The strategy identified knowledge and research, partnerships, and water conservation as means to achieve these goals. After making progress on many of the actions in the 2003 strategy, the GOA revisited and renewed the strategy in 2008. It was then followed in 2009 by the *Water for Life Action Plan*, the GOA's roadmap for water management over the next ten years. (See the Water for Life website, www.waterforlife.alberta.ca)

From the start, the *Water for Life* (WFL) strategy has identified the need for partnerships to achieve its outcomes. This included the creation of the provincial Alberta Water Council (AWC) in 2004. One of the AWC's most important tasks is to regularly review WFL implementation progress: "The review is done in a spirit of adaptive management, where the regular evaluation of progress serves to highlight strengths, identify weaknesses and recommend areas where additional focus would allow the strategy to advance more effectively. The review is completed at a strategic level, focusing on changing water issues and concerns in the province and the effectiveness of the *Water for Life* strategy in meeting them."²

The AWC carries out its review via its WFL Implementation Review Committee, a standing committee which has had approved terms of reference since June 17, 2008. As noted in its terms of reference, the Committee's goal is to "Objectively review progress being made with respect to implementation of the WFL strategy and release periodic reports containing the findings of the reviews."³ Membership on the committee (see Appendix A) includes at least two but not more than three members from each of the four broad categories on the AWC Board:

- Industry
- Non-government organizations
- Government of Alberta and Provincial Authorities
- Government

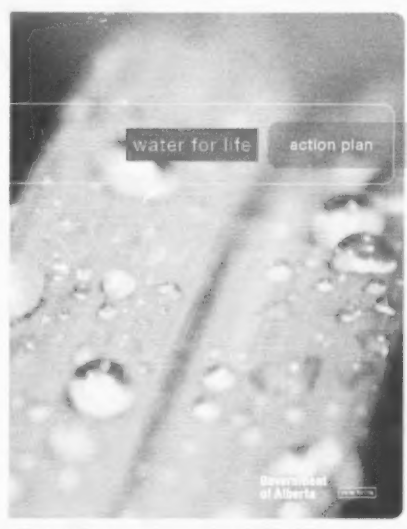
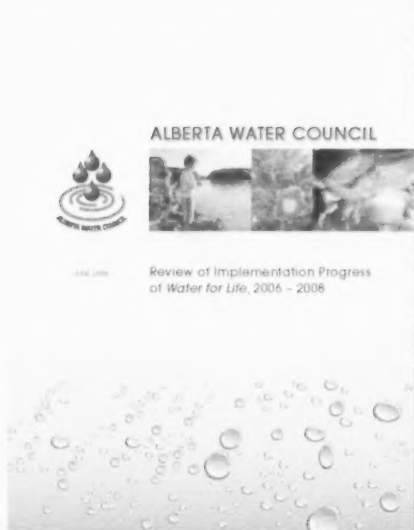
² From the AWC approved "How-to" Guide, www.awchome.ca/LinkClick.aspx?fileticket=FFE7EpyT9kc%3d&tabid=102

³ *Water for Life* Implementation Review Committee Terms of Reference <http://awchome.ca/Portals/0/pdfs/WFLIR%20ToR%20Final.pdf>

Since *Water for Life* was released in 2003, the AWC has completed three implementation reviews, the last one for 2006 – 2008. Many of the recommendations from the last review were incorporated into the GOA's *Water for Life Action Plan*, released in 2009.

This report describes the AWC's fourth review, which provides a snapshot of WFL as of December 31, 2011 including implementation actions for 2009 through 2011. This review will inform the next renewal of WFL.

This review followed the AWC's approved "How-to" Guide, which included interviewing GOA staff to determine the status of each WFL goal or key direction and its associated actions. A survey was also circulated to AWC sector stakeholders and Alberta watershed stewardship groups via the Land Stewardship Centre of Canada to get input on an assessment of each strategy goal and key direction (see Appendix B). Results were then compiled and analyzed, leading to several recommendations. These recommendations were tested once more via sector review and input into a report that was presented to the AWC board for approval in October 2012.



2.0 Review of *Water for Life* Goals and Key Directions

Previous *Water for Life* implementation reviews have focused on each goal and key direction of the strategy, as well as the actions required to achieve them.⁴ A similar analysis was conducted as part of this review and is presented below. Note, however, that the three goals and three key directions do not stand alone; they are often interconnected (e.g., knowledge is essential for healthy aquatic ecosystems) and must be achieved in a cohesive, coordinated fashion for *Water for Life* to succeed.

The target outcomes and actions listed below are from the 2008 renewed *Water for Life* strategy. Timeframes for action completion are short-term (by 2012), medium-term (by 2015) and long-term (by 2019). The Council has used the following Progress Indicators:

- **Currently being re-evaluated:** Implementation of this action has been halted while the action is re-evaluated in light of new information, new direction, relevancy, dependence on the completion of other actions, etc.
- **Limited Progress:** A minimum amount of work has been undertaken towards completing this action (usually due to extenuating circumstances, dependence on the completion of other actions, etc.) and the action will not be completed within the timeframe given.
- **Some Progress:** Some work has been done towards completing the action; however it is uncertain whether the action will be completed within the timeframe given.
- **Progressing-on-track:** On track and likely to be completed within the timeframe given.
- **Completed:** The action has been completed.

⁴ For more on previous *Water for Life* Implementation Review reports, see www.awchome.ca/Projects/WFLIR/tabid/102/Default.aspx

2.1 Safe, Secure Drinking Water

Description: The GOA acknowledges that to ensure Safe, Secure Drinking Water, water managers need to recognize the dependence on aquatic ecosystems as source waters. These source waters are also important for other uses that support the economy. Outcomes for this goal include:

- A comprehensive strategy to protect Alberta's drinking water;
- Timely access for all Albertans to information about drinking water quality in their communities; and
- Adherence of Alberta's drinking water infrastructure to emerging standards and management for long-term sustainability.

Status:

Actions:	Time Frame	Status	Rationale
1.1 Provide and maintain the availability and accessibility of information to Albertans on private water systems.	Short-term	Progressing-on-track	Information and programs like the Working Well Program are available to Albertans operating private systems.
1.2 Review and improve the management of small public drinking water systems.	Short-term	Progressing-on-track	Alberta Health has undertaken several initiatives including a new voluntary operator training program; operating standards for small systems; information resources available through a volunteer operator training program; and an inventory and initial audit of small systems.
1.3 Work co-operatively with First Nations, Métis and the Federal Government to ensure safe drinking water in Aboriginal communities.	Medium-term	Progressing-on-track	Work is ongoing. Treatment plants are being upgraded in small communities like Paddle Prairie Métis Settlement. Some First Nations are conducting needs assessments.
1.4 Develop a waterborne disease surveillance system and undertake waterborne contaminant research.	Medium-term	Some Progress	The Alberta Centre for Toxicology continues to provide water testing for private well owners. Research is continuing on virus testing, arsenic, cytotoxicity detection, etc.

Actions:	Time Frame	Status	Rationale
1.5 Design and implement regional drinking water and wastewater solutions.	Long-term	Some Progress	Between 2007 and 2011, 28 new regional water supply systems and four new regional wastewater systems were developed.
1.6 Develop innovative approaches to build and ensure long-term operational capacity in smaller Alberta communities.	Long-term	Some Progress	A facility operator training program coordinated at the provincial level ensures that operators are meeting accepted standards.
1.7 Update water quality programs to support source protection information and planning.	Long-term	Some Progress	Some stewardship groups (e.g., Moose Lake, Elbow River) are addressing source protection in management plans or by supplementing GOA water quality testing.
1.8 Facilitate upgrades to drinking water and wastewater facilities to meet standards and, where possible, integrate with regional systems.	Medium-term	Progressing-on-track	The GOA spent \$180 million in 2012 on the development of regional systems.
1.9 Facilitate upgrades to drinking water quality in provincial parks and recreation areas.	Long-term	Progressing-on-track	Upgrades in provincial parks and recreation areas are ongoing.

Assessment: The stated outcomes for this goal are still valid, and work continues to advance since the last review. Alberta has a strong foundation for further progress with good drinking water standards and education programs in place. However, this goal still faces challenges including:

- The capacity of different sized drinking water systems to meet the same drinking water standards;
- The knowledge and capacity of sectors to improve point and non-point source pollution² management including the use of natural buffers (e.g., wetlands and riparian areas); and

² Point source pollution here is generally meant to be regulated discharge from the end of a pipe. Non-point source pollution is generally meant here as contamination that enters a water body from diffuse points of discharge with no single point of origin.

- The capacity to undertake source water protection and to respond to potential threats in order to protect high quality source waters and reduce drinking water treatment infrastructure costs.

To meet these challenges, the GOA needs to continue to work with its partners to adopt and promote a risk-based, watershed, source-to-tap drinking water management approach that includes:

- Source protection in each watershed;
- Enhanced point and non-point source pollution management;
- Regional water distribution networks that incorporate water conservation, efficiency, and productivity and utilize full-cost accounting and asset management; and
- Effective monitoring and compliance with regulations.

Recommendation #1: The Government of Alberta continue to develop, adopt and promote a watershed, risk-based, source-to-tap drinking water management approach that includes source protection planning, effective monitoring and compliance of point and non-point source pollution, and efficient and effective water distribution systems.

For more information:

Drinking Water Safety Indicator; <http://environment.gov.ab.ca/info/library/8378.pdf>.
See pages 14, 42 – 44, and 48 of the report.

2.2 Healthy Aquatic Ecosystems

Description: The Healthy Aquatic Ecosystems (HAE) goal seeks to ensure that Alberta's aquatic ecosystems are sustained for future generations. Outcomes for this goal include:

- Protection of aquatic ecosystems in critical areas;
- Priorities for sustaining aquatic ecosystems are established through watershed plans; and
- Management and allocation of water to sustain aquatic ecosystems and ensure their contribution to Alberta's natural capital and quality of life are maintained.

Status:

Actions	Time frame	Status	Rationale
2.1 Finalize and implement a new wetlands policy for Alberta.	Short-term	Some progress	Progress on tools (e.g., inventories, indicators) has been made but a provincial policy is still lacking.
2.2 Protect critical aquatic ecosystems and develop a provincial action plan.	Short-term	Some progress	Various initiatives have been carried out (e.g., Provincial Ecological Aquatic Criteria for Health report; Significant aquatic areas map, etc.).
2.3 Establish science-based methods and tools to determine ecological requirements for HAE.	Short-term	Complete	Some tools have been developed (Instream Flow Needs (IFN) desktop, Fish index tool, etc.); however, it is unknown if these alone are sufficient to determine HAE ecological requirements.
2.4 Establish the Bow Habitat Station.	Short-term	Complete	For information about this facility, see www.srd.alberta.ca/RecreationPublicUse/BowHabitatStation/Default.aspx .
2.5 Set Water Conservation Objectives (WCO) on all major basins.	Medium-term	Limited progress	One of Alberta's seven major basins, the South Saskatchewan, has WCOs. The remainder are to be completed by 2015.

Assessment: The previous *WFL* review identified that the HAE goal, including the development of a new provincial wetland policy and other actions, had fallen behind and required additional resources. Thus the AWC developed the "Recommended Projects to Advance the Goal of HAE," which provided direction on potential projects that could contribute to progress towards this goal. The AWC also carried out the Provincial Ecological Aquatic Criteria for Health project. These criteria were incorporated into the Aquatic Environmentally Significant Areas map, which was completed and released publicly (see www.waterforlife.alberta.ca/03325.html). The AWC's work on non-point source

pollution and riparian land management will also benefit HAE. Much of the work of the Watershed Planning and Advisory Councils (WPACs) and Watershed Stewardship Groups (WSGs) is targeted at aquatic ecosystem health. (For a list of these outputs, see Appendix C).

During the review period, coordination between GOA ministries improved in terms of better aligning mandates to achieve HAE actions. Information and data collection to support HAE has improved. For example, a wetland inventory is now available for 90% of the province. The GOA has also created a desktop method for assessing instream flow needs as well as a Fish Community Index as a tool to assess aquatic health. However, it is uncertain if these tools alone are sufficient for determining the health of aquatic ecosystems including rivers, lakes and wetlands. It is also unclear if legislative tools to protect HAE are effective.

Further, it is unclear who is accountable for achieving this WFL goal and who will address policy gaps for things like lake management or riparian setbacks. As HAE is a shared responsibility, the GOA and its partners must work together to achieve this WFL goal and identify existing and emerging policy gaps in order to address them. For example, municipalities play an active role in protecting aquatic areas and in integrating aquatic ecosystem management into land-use and watershed planning. The two large urban centres (Edmonton and Calgary) in Alberta have developed Total Loading Management Plans and incorporated green infrastructure into their development plans.

Alberta has the potential to be a world leader in managing aquatic ecosystems. Significant progress on this outcome can be achieved by implementing existing *Water for Life* actions. To ensure HAE outcomes are being achieved, performance measures need to be established for assessing aquatic ecosystem health, and aquatic ecosystem management needs to be integrated into environmental management frameworks as well as resource, land-use and watershed planning.

Recommendation #2: The Government of Alberta and stakeholders complete outstanding Healthy Aquatic Ecosystem actions including: finalize and implement a wetland policy (Action 2.1), protect critical aquatic ecosystems (Action 2.2) and set water conservation objectives for each basin (Action 2.5).

Recommendation #3: The Government of Alberta continue to work with its partners to: develop the best available science-based methods and tools to better define requirements for healthy aquatic ecosystems and performance measures; incorporate healthy aquatic ecosystem assessment and management into the province's new integrated cumulative effects monitoring and management systems; and publicly report on progress towards the achievement of healthy aquatic ecosystem outcomes.

For more information:

Healthy Aquatic Ecosystem Reports: www.waterforlife.alberta.ca/03325.html

Provincial Ecological Aquatic Criteria for Health:
www.awchome.ca/Projects/PEACH/tabid/117/Default.aspx

2.3 Reliable, Quality Water Supplies for a Sustainable Economy

Description: The Reliable, Quality Water Supplies for a Sustainable Economy goal of *Water for Life* assures Albertans have the knowledge and tools to implement plans that continue to maintain and improve the management of the province's water resources. Outcomes for this goal include:

- Implementation of a broad range of water management tools;
- Increased awareness for all Albertans of the holistic value of water — as both a part of the economy and improved quality of life;
- Establishment of water management objectives and priorities that support sustainable economic development to be implemented through watershed plans; and
- Management and allocation of water to support sustainable economic development and the strategic priorities of the province.

Status:

Actions	Timeframe	Status	Rationale
3.1 Develop and implement a viable governance system that supports sustainable management of water.	Short-term	Progressing-on-track	A body of literature on Alberta's water allocation system has been developed but the GOA has yet to finalize this review.
3.2 Address the water management and policy risks associated with a changing future water supply resulting from the impacts of challenging climate regimes.	Short-term	Progressing-on-track	Several academic and research initiatives such as hydro-climate modelling have been conducted but it is difficult to say how this work informs policy and decision making.
3.3 Institute mandatory water use public reporting for water licences.	Short-term	Progressing-on-track	Mandatory water use reporting has become a licence condition for many licensees.
3.4 Assess future water supply demands and management options within watershed management planning. Options could include conservation, storage (based on provincial inventory) and water allocation transfers.	Long-term	Some Progress	Progress on this action will become easier as other actions are achieved, however it is important to address this issue sooner rather than later.

Assessment: While some progress has been made on this goal since the last report, there is still a need to complete the water allocation system review, with input from Albertans and others that are vital to achieving this goal.

Additionally, many of the actions for this goal contribute to ensuring that the right information is available to make water management decisions in Alberta. In particular, the data from the Water Use Reporting system is focused on providing reliable baseline information for water managers and the public. The on-line water use reporting system allows licence-holders to report their water use. A query tool is being built to allow public access to the water use data. The automated temporary diversion licence system is another tool for licensing and is used by applicants (the public) to apply for a temporary diversion licence. This tool will provide some indication of water availability in each water body and criteria for licensing. Other areas of ongoing work include: the use of storage; evaluating aspects of water demand; sector planning for water conservation, efficiency, and productivity; and education.

As the GOA continues to move towards regional planning and a Cumulative Effects Management System, there are many opportunities to align water supply management with other Ministries (including Energy, Agriculture and Rural Development and Municipal Affairs) and strategies. However, capacity can be an issue. Staff turnover and succession are another challenge. A plan is needed to transfer knowledge to the next generation so that momentum on the strategy is not lost.

Recommendation #4: The Government of Alberta complete the water allocation review via transparent, broad-based public consultation based on socio-economic and environmental objectives; ensure current and future water demand and supply are understood in each basin; and make this information and other water use data publicly available to inform regional, municipal and other land-use planning initiatives.

For more information:

Water Allocation Transfer System Upgrade Project:
www.awchome.ca/Projects/WATSUP/tabid/107/Default.aspx

2.4 Knowledge and Research

Description: Comprehensive information and accessible knowledge are fundamental to understanding the complex nature of water and water management. From the beginning of the *WFL* strategy in 2003, the GOA has committed to investing in water research and knowledge and providing Albertans with access to a variety of information about water across the province and in communities. Outcomes for this key direction include:

- An understanding by *WFL* partners of the state of Alberta's drinking water, aquatic ecosystems, and the quality and quantity of surface and groundwater resources;
- Easy access to knowledge and information regarding Alberta's water resources and applicable research to make informed water and related air, land and resource management decisions; and
- Incorporation of education tools and strategies into all *WFL* actions.

Status:

Actions	Timeframe	Status	Rationale
4.1 Develop and implement an education framework to support <i>WFL</i> .	Short-term	Currently being re-evaluated	There has been a lot of work in this area by the GOA, AWC, WPACs, Alberta Innovates-Energy and Environment Solutions (AI-EES), and others, but a comprehensive educational framework has not been developed and this action is being re-evaluated to better define the audience and their needs.
4.2 Enhance the Water Information Centre for accessible web-based public information.	Short-term	Progressing-on-track	Through the Centre, WPACs, and sites like the Water Portal, a tremendous amount of water information is available. However, we still have a ways to go to ensure everyone has the right information at the right time.
4.3 Develop qualified water expertise and apply research findings.	Medium-term	Some progress	Through the AI-EES an initial \$30 million in GOA funding has been leveraged to create \$50 million worth of research including more than 35 initiatives.
4.4 Enhance the provincial water monitoring and evaluation program to include information on wetlands, groundwater, aquatic health, water quality and quantity.	Long-term	Some progress	Several initiatives have looked at Alberta's environmental monitoring programs over the past few years. The GOA is now establishing a new provincial environmental monitoring program.

Assessment: Knowledge and research is a key direction of *Water for Life*. Since the last review report, there has been progress on this key direction and most of the actions are on track. Many partnerships, sectors and agencies are improving Albertans' knowledge about water issues. The GOA has focused on developing resources for broader audiences (e.g., Facts about Water in Alberta, the Working Well program). Alberta Innovates — Energy and Environment Solutions (AI-EES) develops knowledge, tools and processes that enable decision makers and practitioners to contribute toward meeting *WFL* objectives while also meeting objectives of the Alberta Water Research Strategy.

However, it is still a challenge to connect audiences with the information they need. Other challenges for this key direction include:

- Actively engaging water managers in gathering, translating and sharing knowledge via a well-coordinated, integrated system of research, monitoring and data-sharing to support *WFL* initiatives;
- Expanding areas of knowledge to better understand all aspects of water and aquatic health (e.g., groundwater vulnerability and interaction with surface water);
- Accessing and sharing proprietary information and knowing who to go to for information (knowledge-brokering);
- Aligning provincial and federal monitoring initiatives;
- Evolving knowledge transfer from primarily passive approaches (web, print material, etc.) to more interactive methods that connect science and practitioners to policy development; and
- Funding and resource capacity to achieve the above.

Because the context for this element has changed significantly since *WFL* was first released in 2003, the Council thought this key direction should be revisited. Once an audience and its needs are clearly defined, a plan can be developed to address the needs and resolve the challenges identified above. As always, capacity will be a limiting factor. The GOA can leverage its work on improving water knowledge by improving coordination between its ministries and the province's research and academic institutions.

Recommendation #5: The Government of Alberta and its *Water for Life* partners, working closely with research and academic institutions and other education and outreach providers, revisit the knowledge and research key direction and develop a plan to improve public and sector understanding of the value of water to better inform public policy and decision making.

For more information:

Alberta Water Portal: www.albertawater.com

Alberta Water Research Strategy:
www.awchome.ca/Projects/WaterResearchStrategy/tabid/109/Default.aspx

2.5 Partnerships

Description: As part of the GOA's commitment to shared responsibility, *WFL* partnerships ensure that citizens and stakeholders have opportunities to contribute to achieving the water strategy's three goals. Outcomes for this key direction include:

- Timely and strategic advice given to governments, industry and non-government organizations by the Alberta Water Council (AWC);
- Maintaining Watershed Planning and Advisory Councils (WPACs) as leaders in watershed assessment and planning; and
- Continued work by Watershed Stewardship Groups (WSGs) to take community-level action to safeguard Alberta's water resources.

Status:

Actions	Timeframe	Status	Rationale
5.1 Continue to resource and support <i>Water for Life</i> partnerships.	Long-term	Progressing-on-track	GOA provided approximately \$3 million/year to partnerships, but a sustainable funding approach has yet to be finalized.
5.2 Integrate watershed management with the Government of Alberta's Land-use Framework regional planning and cumulative effects management system.	Short-term	Progressing-on-track	Guidance on state of reporting and indicators has been developed. Additional planning guidance is being developed.
5.3 Establish Watershed Planning and Advisory Councils for the Athabasca and Peace watersheds.	Medium-term	Complete	These two WPACs have been formed.
5.4 Develop watershed management plans for the Milk, Oldman, South Saskatchewan, Bow, Red Deer, North Saskatchewan, Battle, Cold Lake-Beaver, and Lesser Slave Lake.	Short-term	Progressing-on-track	Plans are in various stages. See Appendix C for a list.
5.5 Complete and implement watershed management plans for all major watersheds.	Long-term	Progressing-on-track	Plans are in various stages. See Appendix C for a list.
5.6 Complete transboundary bilateral agreements with neighbouring jurisdictions.	Short-term	Progressing-on-track	Alberta's negotiations with BC and NWT are ongoing.

Assessment: The Partnerships key direction is integral to WFL. The work of the partnerships remains relevant and continues to add value to watershed management. The AWC effectively provides strategic advice to its members. With the designation of the Peace and Athabasca WPACs, active WPACs now exist for all major watersheds. WSGs continue to be active on the landscape. Grants have been provided annually under the WSG Grant Program, administered by the Land Stewardship Centre of Canada, to support WSG activities; the GOA provides project and partial operational funds to run this program. In addition, the GOA is developing decision-support tools to assist these groups (e.g., GeoDiscover Alberta).

The GOA has clearly signalled its support of and encouragement for the partnership approach to water and watershed management planning; this support is evident in that the *Water for Life* strategy and associated action plan have been approved twice by Cabinet, and through the GOA's continuing participation in the partnerships. These actions reflect the value the GOA attaches to the partnerships and clearly indicates that the partnerships should be supported by all water-using sectors.

Opportunities for this key direction include:

- The use of performance measures to assess progress towards outcomes;
- The development of environmental management frameworks where needed to address priority issues; and
- The potential of other partnerships such as municipalities, neighbouring jurisdictions, and industry groups to contribute to the achievement of WFL goals.

The partnerships also have an increasing number of opportunities to build stronger relationships with academic and research organizations to ensure the partnerships have the expertise and technical tools they need to support their work.

Financial, technical, human and administrative capacity continues to be a challenge for partnerships. Recent recommendations from the AWC's *Moving from Words to Actions* report are aimed at improving communication, coordination and organizational capacity. Other capacity issues need to be resolved so that the GOA and the partnerships have more certainty and can carry out longer term operational planning. Integrating management of water with the management of other natural resources to better address cumulative effects will increase the need for capacity and collaboration. Expectations and resources should match.

In-kind support is as important as cash. The value of collaborative water and watershed management is still not fully realized by some sectors and there is a lack of active engagement by some. Clear understanding of the outcomes of the planning process in terms of responsibilities, and measurable impacts of recommended management actions would contribute to a greater level of participation and support by all. Sharing success stories may also motivate others to participate.

Recommendation #6: *Water for Life* partnerships clearly identify their capacity needs in relation to provincial and basin *Water for Life* priorities and seek collaborative approaches to long-term sustainable resourcing of these needs.

For more information:

Moving from Words to Action report:

www.awchome.ca/Projects/CompletedProjects/WordstoActions/tabid/133/Default.aspx

GeoDiscover Alberta: <https://maps.srd.alberta.ca/geoportal/catalog/main/home.page>

2.6 Water Conservation

Description: To achieve the three goals of WFL, Albertans need to be aware of how they use water. Outcomes for this key direction include:

- Demonstration in all sectors of best management practices, ensuring overall efficiency and productivity of water use in Alberta improves by 30% from 2005 levels by 2015. This will occur when either:
 - Demand for water is reduced; or
 - Water use efficiency and productivity are increased.

Status:

Actions	Timeframe	Status	Rationale
6.1 Develop tools to integrate environmental, economic, and social values into water management decision-making.	Medium-term	Some progress	An ecosystem-approach pilot project to integrate environmental and socio-economic values into wetland approval decision making was completed in 2011. A rapid assessment tool to assess relative wetland function for southern Alberta is being piloted with results incorporated into other wetland policy work. No other projects have been initiated due to a lack of problem definition.
6.2 Develop and implement an enhanced education program to encourage water conservation.	Short-term	Currently being re-evaluated	GOA is exploring a broader approach through the Cumulative Effects Management System (CEMS) lens.
6.3 Work with key water sectors to develop, implement and monitor conservation, efficiency, and productivity (CEP) plans.	Short-, Medium- and Long-term	Progressing-on-track	Excellent progress with a framework and 7 of 7 sector plans done by June 2012.

Assessment: While some parts of this key direction have made good progress, other areas are behind. Action 6.1 to integrate economic, social and environmental values into decision making has made limited progress due to problem definition: what problem requires resolution and which tool(s) are best to address the problem? Additionally, Action 6.2 is being re-evaluated by the GOA along with the entire WFL education plan in order to develop a more holistic approach to education and outreach.

All seven major water using sectors have made good progress developing Conservation, Efficiency and Productivity (CEP) plans. As the plans are implemented, there is opportunity to see how CEP gains can contribute to achieving WFL goals.

There are several opportunities for advancing this key direction. Government funding for future water and wastewater infrastructure improvements could be tied more directly to water CEP efforts and full cost accounting and asset management on the part of water users. The next phase of CEP planning will involve evaluating the implementation progress of CEP sector plans. It is expected that as sectors implement their plans, they will identify future opportunities, challenges, and needs for developing a long-term monitoring framework to measure progress against WFL goals and the aspirational target of 30% improvement in efficiency and productivity.

Recommendation #7: Water-using sectors with water conservation, efficiency and productivity (CEP) plans raise awareness of their plans by promoting them to their members, thus encouraging all members to develop individual CEP plans or strategies to contribute to CEP gains.

Recommendation #8: The Government of Alberta investigate the use of additional economic instruments, applied in an equitable manner, to encourage water conservation, efficiency and productivity and determine how this approach will contribute to the achievement of all three WFL goals.

Alternative means of achieving the outcomes of this key direction were also considered; there may be opportunity in the work of the GOAs Reclaimed Water Working Group on the re-use and recycling of lower quality water sources (e.g., treated industrial or municipal effluent) to decrease demand for raw water withdrawals. Water re-use is mentioned briefly in the WFL strategy (2008), but with no specific actions to address this topic. The Alberta Water Council will be considering a statement of opportunity to host a symposium on this topic. A symposium of this nature would help inform key stakeholders on the risks, opportunities and policy considerations associated with re-use and recycling of lower quality water sources for specific uses.

For more information:

AWC Water Conservation, Efficiency and Productivity Page:
www.awchome.ca/Projects/WaterCEP/tabid/115/Default.aspx

Government of Alberta Reclaimed Water Working Group
www.municipalaffairs.alberta.ca/1171.cfm

Ecosystem Services Approach Pilot on Wetlands: Integrated Assessment Report
<http://environment.gov.ab.ca/info/library/8493.pdf>

2.7 Integrating Water and Land Use via Cumulative Effects Management

Given the new GOA policy direction that has emerged since the last AWC WFL implementation review, the current review considered how the implementation of WFL might be augmented by the Cumulative Effects Management System (CEMS) and regional planning approach.

Status: Implementation of WFL and regional planning through the Land Use Framework (LUF) are strategically well-aligned in that they share the following characteristics: they consider social, economic, and environmental considerations; they are future-focused, place-based, science and knowledge-based, collaborative, adaptive; and they incorporate monitoring and reporting.

Both the LUF and WFL have been very focused on plan development. However, GOA ministries, including Alberta Environment and Sustainable Resource Development, are determining processes and resources required for integrated delivery of LUF regional plans, starting with the Lower Athabasca Region. GOA ministries are also working on processes and approaches for integrated development and implementation of environmental management frameworks (air, water, biodiversity, and landscape management), which set targets, thresholds, and triggers for management actions and are established under LUF regional plans.

WPACs and WSGs across Alberta are all engaged at different levels with the issues and concerns of their respective memberships. Watershed planning priorities depend on the identified level of concern for a specific area in their watersheds. Undertaking a watershed scale assessment helps stakeholders in the watershed prioritize planning and stewardship activities, and create recommendations for best management practices. Working with their stakeholders, WSGs and WPACs should continue to have the flexibility to define priorities for planning and management based on the assessment, associated resource capacities, and recommendations arising from the state of the watershed process, in consultation with their membership.

Assessment: While this work is still in its infancy, water is very much part of the discussion during the regional planning process. Where a LUF regional plan is completed prior to any watershed management planning within the region, the regional plan may provide direction or guidance for more focused or detailed watershed planning within the region. Watershed plans can also inform and be championed through municipal planning initiatives for integration across several levels of government.

The challenges of integrating WFL with other initiatives include:

- Stakeholders having a shared understanding of the various planning approaches;
- Participants having appropriate information to engage in "trade-off" discussions; and
- The ability to coordinate the planning and implementation of land-use and watershed plans among stakeholders and governments, different orders of government, and different government departments.

Opportunities for this key direction include:

- The Province can show leadership in source water protection by integrating water and watershed management in whole or in part, into provincial, regional, resource and municipal land-use planning.
- All sectors, including WPACs and WSGs can support and inform other planning initiatives including provincial, regional, resource and municipal planning at multiple scales (water body, basin, sub-basin, etc.) and play a key role in plan implementation and success.
- WPACs can identify how watershed assessment and planning can inform other planning initiatives and identify what specific WPAC knowledge and information they can provide (current state, trends, indicators, etc.).
- Alberta can be a leader in promoting innovative best management practices in watershed management, especially non-point source pollution control, through encouraging Low Impact Development.

Recommendation #9: *Water for Life* partnerships, in undertaking iterative and adaptive watershed assessment and planning, continue to work with the Government of Alberta and other sectors to integrate this work into the provincial cumulative effects management system and regional, municipal, resource and other land-use planning initiatives.

3.0 Overall Assessment of the Implementation of the WFL Strategy

After analysing each goal and key direction, the Council looked broadly at the WFL strategy for the period 2009 – 2011 and organized the findings into three themes:

1. A Solid Foundation
2. Looking Forward
3. Filling the Gaps

Theme 1 — A Solid Foundation

Since the WFL strategy was released in 2003, a solid foundation has been built to support its implementation. Progress has been made on every element and most of the actions identified in the WFL 2009 action plan (see Table 1). The strategy is still relevant and important to sectors, as demonstrated through their commitment to the strategy and their participation in many WFL initiatives. There is a growing culture of stewardship in Alberta whereby individuals and organizations are proactively identifying and improving their understanding of water issues and what the management choices are. Additionally, there is increasing integration across watershed partnerships and other environmental media.

The WFL strategy contains three goals and three key directions, which are noted in Table 1 as "Elements." Each element is supported by several actions, and progress on each action varies.

Table 1. Progress on WFL Goals and Key Directions

Element*	Actions Under Review	Actions making Limited Progress	Actions making Some Progress	Actions Progressing on Track	Actions Completed	Total # of Actions for each goal or key direction
Safe, Secure Drinking Water			4	5		9
Healthy Aquatic Ecosystems		1	2		2	5
Reliable Quality Water Supplies			1	3		4
Knowledge and Research	1		2	1		4
Partnerships				5	1	6
Water Conservation	1		1	1		3
Total # (%) of WFL actions in each category	2 (6%)	1 (3%)	10 (32%)	15 (48%)	3 (10%)	31

* Each element has a number of sub-actions that could also be evaluated.

Theme 2 — Looking Forward

Water for Life as a provincial policy framework will be ten years old in 2013. There is an expectation from both the GOA and the WFL partnerships that implementation should be showing measurable signs of progress by now. Building on the strategy's success to date, there is also an expectation that the strategy will continue to evolve and improve. Thinking about where we have been and what the next evolution of WFL might look like, one might envision an Alberta where:

- Albertans have an increased awareness and understanding of the value of water and are engaged in finding innovative solutions to emerging water issues.
- WFL partnerships are vibrant, sustainable and engaged in implementing the WFL strategy.

- WFL is underpinned by a solid foundation of traditional, scientific, and technical knowledge. This knowledge system is transparent, easily accessible in an open data platform where the appropriate information and tools (such as full cost accounting, ecosystem services, water budgets, models, etc.) are actively used to inform trade-off discussions and decision making.
- Performance-based watershed management plans include source water protection and are integrated with environmental management frameworks, regional plans and other land-use and resource planning processes.
- An efficient and transparent water allocation system provides policy certainty, supports the achievement of watershed objectives and all three WFL goals.

Theme 3 — Filling the Gaps

Before we can move to the next evolution of *Water for Life*, some gaps in the strategy need to be filled. Assessing whether we are closer to achieving the three WFL goals is particularly challenging. We need to ask ourselves, “*Since WFL was released almost ten years ago, are aquatic ecosystems healthier? Is our drinking water more safe and secure? Are reliable quality water supplies available for economic growth and development?*” We can even go one step further and ask: “*Is the policy advice we’ve created the best advice?*” and “*Are the partnerships we’ve created effective?*”

One difficulty in using the current review approach is that it assesses the completion of actions, not the achievement of outcomes. Additionally, different stakeholder groups may have differing expectations of the outcomes.

It has been difficult to assess the implementation of policy advice provided through partner recommendations, although the AWC recently created a tracking process for Council recommendations (see www.awchome.ca/Publications/RecommendationTracking/tabid/160/Default.aspx). In the future, when policy direction is given, it would be helpful if more details were provided (How will the recommendation be implemented? How will it be measured? By when and with what resources? etc.). As well, the efficacy of WFL partnerships is difficult to quantify and needs to be properly evaluated to create a higher degree of success.

In the absence of metrics, it is also challenging to compare progress against resources invested. Looking at the resource expenditures allocated to each goal, we need to know if we are getting a good return on investment. While this review looks qualitatively at the actions that have been taken, further improvement requires a set of quantitative metrics against which *WFL* outcomes, policy and partnerships can be measured. This approach is consistent with a cumulative effects management approach, which will require quantitative evidence-based assessment. The system of measurement should not only measure achievement of the targets established in the strategy, they should also assess the resulting impacts and benefits to the watershed or aquatic ecosystems under consideration.

Recommendation #10: The Government of Alberta develop quantitative performance criteria and clear metrics that assess the progress towards *Water for Life* goals and key directions before the next Alberta Water Council strategy review in 2015.

Alberta has made significant progress in implementing *Water for Life* over the past decade, but as with the management of any resource, work remains to be done. While this report focuses on advice to the GOA, as the strategy's keeper, it is also the responsibility of all Albertans to use and manage water responsibly.

Many government ministries, agencies, organizations, and individuals are working to ensure our management of this precious resource is sound. All sectors have improved their awareness of water issues and are taking steps to proactively mitigate risk. This momentum needs to continue. The upcoming 10-year anniversary provides an opportunity for not just the GOA but all sectors to re-confirm their commitment to the enduring direction that *Water for Life* has laid out so well. It also provides an opportunity to reflect on how we can continue to work together to move water management in Alberta forward.



Appendix A: Committee Members

Member	Representing	Sector
Ron McMullin	Alberta Irrigation Projects Association	Irrigation
John Skowronski	Canadian Fuels Association	Chemical and Petrochemical
Louis Pawlowich	Métis Settlements General Council	Government
Rachel Bocock	Alberta Urban Municipalities Association	Small Urban
Mark Brostrom	City of Edmonton	Large Urban
Jason Unger	Environmental Law Centre	Environmental
Arin MacFarlane-Dyer	Alberta Lake Management Society	Lake Environment Conservation
Lisa Maria Fox	Bow River Basin Council	Watershed Planning and Advisory Councils
Tom Davis	Government of Alberta and Provincial Authorities	Alberta Environment and Sustainable Resource Development
Christine Lazaruk	Government of Alberta and Provincial Authorities	Alberta Environment and Sustainable Resource Development

Appendix B: Distribution of Online *Water for Life* Implementation Review Survey Responses

City/Town/Region	# of Responses
Bonnyville	1
Calgary	28
Camrose	1
Cochrane	1
Drayton Valley	1
East of Calgary	1
East of Edmonton	1
Edmonton	18
Edson	1
Fort McMurray	2
Hinton	1
Lethbridge	2
Northeast of Edmonton	2
North of Edmonton	3
Northwest corner of Province - not Peace River or Grande Prairie	2
Northwest of Edmonton	1
Red Deer	1
Sherwood Park	5
South of Edmonton and east of Red Deer	1
South of Province, not Lethbridge, Coaldale or Taber	1
South West of Calgary	2
Spruce Grove	1
St. Albert	1
Sylvan Lake	1
Taber	1
West of Edmonton	2
Total	82

Appendix C: Outputs of the WPACs, WSGs and others

Basin/ Sub-Basin/ Watershed	Lead Organization		Product	Status	Benefit	Additional Info
Peace/Slave River Basin						
Heart River Watershed	Northern Sunrise County	Municipality	Watershed Management Plan	Completed 2009	Will assist in achieving the 3 outcomes of WFL and will lead to improved water quality in the Heart Watershed	http://aquality.ca/uploads/news/id93/Heart_River_WMP.pdf
Athabasca River Basin						
Lesser Slave Sub-Basin	Lesser Slave Watershed Council	WPAC	LS River IFN Scoping Study	Completed 2004	Recommendations provide the basis for existing field program to determine IFN values for specific segments of the Lesser Slave River	http://environment.gov.ab.ca/info/library/7632.pdf
	Lesser Slave Watershed Council	WPAC	LS Sedimentation Study	Completed 2005	Recommendations provide the basis for river channel and bathymetric surveys to evaluate the impact of man-caused channel changes on lake sedimentation.	
	Lesser Slave Watershed Council	WPAC	LS Lake Water Level Needs Scoping Study	Completed 2006	Recommendations provide the basis for field program to determine ecological water needs for Lesser Slave Lake.	
	Lesser Slave Watershed Council	WPAC	State of the Watershed Report	Completed 2009	Evaluate existing condition or health of the Lesser Slave watershed.	www.lswc.ca/LSWC_stateofthewatershed.pdf

Basin/ Sub-Basin/ Watershed	Lead Organization		Product	Status	Benefit	Additional Info
	Lesser Slave Watershed Council	WPAC	Water Management Plan - Phase 1	Completed 2010	Recommendations to ensure water supply, during low flow conditions, for municipal and industrial users of the Lesser Slave River.	www.lswc.ca/Phase%201%20Water%20Management%20Plan%20July%202009-%20FINAL.pdf
	Lesser Slave Watershed Council	WPAC	In-stream Flow Needs Study	Ongoing		
	Lesser Slave Watershed Council	WPAC	Water Quality Report on Lesser Slave Lake tributaries	Ongoing — anticipated completion date unknown.	Summary report for water quality data collected over the last 3 year on a number of tributaries.	
Athabasca River Sub-Basin	Keepers of the Athabasca	Multi-stakeholder organization	State of Watershed Report	Completed 2008	Provides a snapshot on the current environmental conditions across the watershed.	www.keepersofthewater.ca/files/state2008.pdf
	Athabasca Watershed Council	WPAC	State of the Watershed Report	Ongoing — expected 2012	Provides snapshot of current conditions; identifies environmental issues to be addressed in plan.	
Flat Lake Watershed	Flat Lake Watershed Management Committee	WSG	State of the Watershed Report	Completed 2007	Understanding current conditions	
	Flat Lake Watershed Management Committee	WSG	Water Management Plan	Completed 2009	Support regulatory decision	
Muskeg River Watershed	CEMA Watershed Integrity Task Group	Multi-stakeholder organization	State of the Watershed Report	Completed 2008	Background information	http://cemaonline.ca/index.php/working-groups/swwg

Basin/ Sub-Basin/ Watershed	Lead Organization	Product	Status	Benefit	Additional Info
	Alberta Environment	Government	Interim Management Framework for Water Quantity and Quality	Completed 2008	Regulatory support http://environment.gov.ab.ca/info/library/7951.pdf
	Alberta Environment	Government	Management Framework for Quantity and Quality	Completed 2010	Regulatory support
Lac La Biche Watershed	Lakeland County	Municipality	State of the Watershed Report	Completed 2004	Background information http://aquality.ca/uploads/news/id56/Aquality_LLBSoW_2004.pdf
	Lakeland County	Municipality	Watershed Management Plan	Completed 2009	Will achieve the 3 goals of the <i>Water for Life</i> www.lacbabichetownship.com/files/lacbabiche/watershed_management_plan.pdf
Lac La Nonne Watershed	Lac La Nonne Watershed Stewardship Society	WSG	State of the Watershed Report	Completed 2006	Provide a benchmark to assess effectiveness of stewardship activities; identify priority issues within watershed. www.laclanonnewatershed.com/LLN_SoW_Report.pdf
Beaver River Basin					
Cold Lake-Beaver River Watershed	Alberta Environment	Government	State of Surface Water Quality & Quantity, Groundwater Quality & Quantity	Completed 2006	Provided updated water use and demand scenarios and current data related to water quality/quantity. Info used to update CLBR plan http://environment.alberta.ca/01269.html
	Alberta Environment	Government	Water Management Plan	Completed 2006	Resolved outstanding water allocation issues. Provides management guidelines for future water and watershed management decisions, prompted development of WPAC http://environment.alberta.ca/documents/Basin_Water_Mgmt_Plan_2006.pdf

Basin/ Sub-Basin/ Watershed	Lead Organization		Product	Status	Benefit	Additional Info
Beaver River Basin	Beaver River Watershed Alliance	WPAC	State of the Watershed Report	Ongoing – expected 2012	Will provide a snapshot of the current conditions in the watershed	http://beaverriverwatershed.ca/index.php?page=state-of-the-watershed-reporting
	Beaver River Watershed Alliance	WPAC	Watershed Management Plan Terms of Reference	Ongoing – expected 2012	Will provide a framework for the development of a watershed management plan for the Beaver River basin	http://beaverriverwatershed.ca/index.php?page=iwmp
Moose Lake Watershed	Moose Lake Water for Life Committee	WSG	State of the Watershed Report	Completed 2006	Baseline information	http://md.bonnyville.ab.ca/downloads/residents/mooselake_watershed/environmental_inventory_report_may2005.pdf
	Moose Lake Water for Life Committee	WSG	Watershed Management Plan	Completed 2006	Improving lake water quality and healthy aquatic ecosystem	http://md.bonnyville.ab.ca/downloads/residents/mooselake_watershed/mngmt_plan_apr30_2007.pdf
Skeleton Lake Watershed	Skeleton Lake Stewardship Association	WSG	State of the Watershed Report	Completed 2007	Understanding current conditions	www.skeletonlake.com/index.php/resources/reports/
	Skeleton Lake Stewardship Association	WSG	Watershed Management Plan	Completed 2010	Support in achieving WFL goals and outcomes	www.skeletonlake.com/index.php/resources/reports/
Baptiste Lake Watershed	Baptiste, Island & Skeleton Lake Watershed Group	WSG	State of the Watershed Report	Completed 2008	Background information	www.southbaptiste.com/download_files/State%20of%20Baptiste%20Lake%20Watershed%20report.pdf
	Baptiste, Island and Skeleton Lakes Watershed and Lake Stewardship Council	WSG	Watershed Management Plan	Ongoing	Improving lake water quality and healthy ecosystem	

Basin/ Sub-Basin/ Watershed	Lead Organization	Product	Status	Benefit	Additional Info	
North Saskatchewan River Basin						
North Saskatchewan River Sub-Basin	North Saskatchewan Watershed Alliance	WPAC	State of the Watershed Report	Completed 2005	Provides a snapshot on the current environmental conditions across the watershed.	http://nswa.ab.ca/content/state-of-the-watershed
	North Saskatchewan Watershed Alliance	WPAC	IFN Scoping Study	Completed 2007	Reviews the current state of information relevant to and recommends methodologies for completing an in-stream flow needs assessment.	http://nswa.ab.ca/pdfs/Instream_Needs_2007.pdf
	North Saskatchewan Watershed Alliance	WPAC	Water Use and Demand Study	Completed 2007	Provides a mainstem and sub-basin review of current and future water use among the various sectors.	http://nswa.ab.ca/content/current-and-future-water-use
	North Saskatchewan Watershed Alliance	WPAC	Integrated Watershed Management Plan	Released June 2012	Provides recommendations on water quality and quantity objectives (WCOs) for key reaches within the NSR. Land use goals and policy recommendations will complement water objectives as part of an integrated watershed management approach.	http://nswa.ab.ca/content/integrated-watershed-management-plan

Basin/ Sub-Basin/ Watershed	Lead Organization		Product	Status	Benefit	Additional Info
	Alberta Environment	Government	Water Management Framework for the Industrial Heartland — Phase 1 (2007 – 2009) Phase 2 (2009 – 2012) Phase 3 (2012 – 2041)	Phase 1 Completed 2007 Phase 2 ongoing	Cumulative limits defined for weekly flows and water quality parameters. Information will assist with regulatory approvals within Industrial Heartland.	http://environment.gov.ab.ca/info/library/7864.pdf
Lake Wabamun Watershed	Wabamun Watershed Management Council	WSG	Watershed Management Plan	Ongoing — expected 2011 or 2012	Community-based environmental outcomes, indicators and management targets to be incorporated within regulatory approvals, and extension programming in the basin.	www.wwmc.ca
Battle River Sub-Basin	Battle River Watershed Alliance	WPAC	Watershed Atlas	Completed 2005	Provides base information on the watershed	www.battleriverwatershed.ca/maps-data/items
	Battle River Watershed Alliance	WPAC	Index of Biological Integrity Study	Ongoing — expected 2009	HAE results	www.battleriverwatershed.ca/
	Battle River Watershed Alliance	WPAC	State of the Watershed Report	Ongoing — expected 2011	Identifies environmental issues to be addressed in plan	www.battleriverwatershed.ca/content/state-watershed-report

Basin/ Sub-Basin/ Watershed	Lead Organization		Product	Status	Benefit	Additional Info
	Alberta Environment	Government	Water Management Plan	Ongoing — expected 2011	Main stem WCOs and determination of allocation limits	www3.gov.ab.ca/env/water/ regions/battle/index.html
Pigeon Lake Watershed	Pigeon Lake Watershed Association	WSG	State of Watershed Report	Completed 2008	Provides baseline information, and identify priority issues within watershed.	http://plwa.ca/pages/documents
	Pigeon Lake Watershed Association	WSG	Watershed Management Regulatory Review	Completed 2009	Overview of existing policy and regulations at all levels of government within the Pigeon Lake Watershed. Provides recommendations for streamlining policies and regulations.	
	Pigeon Lake Watershed Association	WSG	Watershed Management Plan Terms of Reference	Ongoing — expected 2011	Sets out the planning process to be used in the development of a watershed management plan.	

Basin/ Sub-Basin/ Watershed	Lead Organization	Product	Status	Benefit	Additional Info	
South Saskatchewan River Basin						
South Saskatchewan River Basin	Alberta Environment	Government	Approved Water Management	Approved by Cabinet 2006	WCOs and determination of allocation limits. Policy direction on water management in SSRB.	www3.gov.ab.ca/env/water/regions/ssrb/PDF_documents/SSRB_Phase_One_Plan.pdf
Red Deer River Sub-Basin	Red Deer River Watershed Alliance	WPAC	Watershed Atlas	Completed 2007	Provides base information on the watershed	www.rdrwa.ca/maps.php
	Red Deer River Watershed Alliance	WPAC	State of the Watershed Report	Completed 2009	Identifies environmental issues to be addressed in plan	www.rdrwa.ca/?page_id=120
	Red Deer River Watershed Alliance	WPAC	Watershed Management Plan	Ongoing – expected 2013 – 14	Provides recommendations for water and land management pertaining to the three outcomes from W4L (e.g. quality/quantity/HAE)	www.rdrwa.ca/?page_id=124
Bow River Sub-Basin	Bow River Basin Council	WPAC	State of the Watershed Report	Completed 2005	Provides a snapshot on the current state of the Bow Basin.	www.brbc.ab.ca
	Bow River Basin Council	WPAC	Watershed Management Plan – Phase 1: Water Quality Objectives	Completed 2008	Provides recommendations and sets water quality objectives for key rivers and reaches in the Bow Basin.	www.brbc.ab.ca/index.php?option=com_content&view=article&id=96&Itemid=210

Basin/ Sub-Basin/ Watershed	Lead Organization		Product	Status	Benefit	Additional Info
	Bow River Basin Council	WPAC	Future Planning Priorities for the Bow River Basin Council	Completed 2009.	Provides the long-term strategy for moving forward with the Bow Basin Watershed Management Plan and State of Watershed products.	www.brbc.ab.ca/pdfs/SWATMaterials/SWAT_May_6_2009_Final_Report.pdf
	Bow River Basin Council	WPAC	Web-based State of the Watershed Report and Summary Booklet	Completed 2010 Updates to website ongoing	Provides a snapshot on the current state of the Bow Basin.	http://wsow.brbc.ab.ca/
	Bow River Basin Council	WPAC	Watershed Management Plan - Phase 2: Headwaters, Wetlands, Riparian and Land use.	Ongoing — expected October 2012	Provides recommendations on land use, headwaters, wetlands and riparian areas.	www.brbc.ab.ca/index.php?option=com_content&view=article&id=96&Itemid=210
Nose Creek Watershed	Nose Creek Watershed Partnership	WSG	Water Management Plan Report	Completed 2008	Identifies actions for local municipalities to protect riparian areas and improve water quality of this tributary watershed of the Bow River.	http://nosecreekpartnership.com/our-plan/nose-creek-watershed-water-management-plan
Elbow River Watershed	Elbow River Watershed Partnership	WSG	Water Management Plan Report	Completed 2008	Provides decision-making advice for the protection of water quality and sets water quality objectives to maintain excellent water quality in upper reaches.	www.erwp.org/index.php/water-management-plan/plan

Basin/ Sub-Basin/ Watershed	Lead Organization		Product	Status	Benefit	Additional Info
Ghost River Watershed	Ghost River Watershed Alliance	WSG	Watershed Management Plan	Ongoing		www.ghostwatershed.ca/GWAS/Research_%26_Data.html
Upper Bow Basin	Upper Bow Basin Cumulative Effects Study	Multi-stakeholder interest group	Cumulative Effects Study	Phase One completed. Phase Two completed.	The goal of the UBBCES is to develop a scientific understanding of the potential cumulative effects on water quality and quantity of all types of land use within the study area.	www.alces.ca/home/Projects/Case_Studies/Upper_Bow_River_Basin_Cumulative_Effects_Study
Jumpingpound Creek Watershed	Jumpingpound Creek Watershed Partnership	WSG	State of the Watershed Report	Completed 2009		www.rockyview.ca/Default.aspx?tabid=400
	Jumpingpound Creek Watershed Partnership	WSG	Integrated Watershed Management Plan	Ongoing		www.rockyview.ca/Default.aspx?tabid=400
Highwood River Watershed	Alberta Environment	Government	Water Management Plan	Completed 2008	Outlines operating plan for the Highwood River diversion.	http://environment.gov.ab.ca/info/posting.asp?assetid=7977&searchtype=asset&txtsearch=Highwood
Oldman River Sub-Basin	Oldman Watershed Council	WPAC	Oldman River State of the Watershed Report	Completed 2010	Provides a snapshot of the watershed with issues, gaps, trend and analysis identified within the broad watershed and sub-watershed (4) scale. Broad indicators also provided.	www.oldmanbasin.org/pdfs/OldmanRiverStateOfTheWatershed-MainReport/OldmanRiverStateOfTheWatershed-MainReport/FullReport.pdf
	Oldman Watershed Council	WPAC	Integrated Watershed Management Plan – Phase One: Planning Vision and Qualitative Outcomes	Completed 2010	Provides the social context of the watershed and collected data on barriers and opportunities setting the stage for a risk and priority setting process.	http://oldmanbasin.org/index.php/teams-and-projects/integrated-watershed-management-plan-team/

Basin/ Sub-Basin/ Watershed	Lead Organization		Product	Status	Benefit	Additional Info
	Oldman Watershed Council	WPAC	Integrated Watershed Management Plan - Phase Two: Strategic Risk Assessment and Planning Priorities Report	Expected March 2011	Identifies risks in terms of social, economic and environmental factors and prepares planning priorities for the watershed.	http://oldmanbasin.org/index.php/teams-and-projects/integrated-watershed-management-plan-team/
South Saskatchewan River Sub-basin	SEAWA South East Alberta Watershed Alliance	WPAC	Web-based State of the Watershed Report and summary booklet	Completed 2011	Data warehouse of information on the South Saskatchewan River Sub-basin.	www.seawa.ca
	SEAWA South East Alberta Watershed Alliance	WPAC	IWMP	Ongoing		
	SEAWA South East Alberta Watershed Alliance	WPAC	Review of water monitoring in this sub-basin	Initiated in 2012 - to be completed in 2013.		
Milk River Basin						
Milk River Basin	Milk River Watershed Council Canada	WPAC	State of the Watershed Report	Completed 2008	Provides snapshot of current conditions; draws attention to priority issues and information gaps.	www.milkriverwatershedcouncil.ca/SOW2
	Milk River Watershed Council Canada	WPAC	Integrated Watershed Management Plan	Ongoing		www.milkriverwatershedcouncil.ca/management_plan



ALBERTA WATER COUNCIL

Website: www.albertawatercouncil.ca

